

## Section 2.9 Water Resources

**Note: Due to the number of deficiencies in this section, we have numbered them for convenience in making internal references.**

**WR-1: Data Adequacy Deficiency** – Please provide a discussion of the indirect impacts of project wastewater disposal and any mitigation measures or monitoring activities to be undertaken to ensure no adverse environmental impacts.

**Data Adequacy Response** – Wastewater from the facility will consist of sanitary discharge to an on-site leachfield, stormwater runoff discharged to Clay Creek and process water discharged to Clay Creek under an NPDES permit.

Sanitary discharges will be treated by package plant and discharged to a leachfield system constructed and operated according to the standards and requirements of the County. Compliance with the construction conditions required for siting, including depth of leach lines, demonstrated percolation rates and distance to nearest sensitive water bodies will ensure that wastewater would not cause adverse impacts to the groundwater or downstream surface waters.

Stormwater discharged to Clay Creek will use Best Management Practices (BMPs) to remove contaminants in the stormwater before disposal to an on-site detention pond. The primary BMP is an oil-water separator. The function of the detention pond is to slow flows to Clay Creek, to prevent flooding and large pulse flows that could damage the stream. The on-site stormwater basin is approximately 600 feet long and 15 feet deep. The detention pond drain line will be 12-inch reinforced concrete pipe. The drainage system will be designed to drain the pond over a 24-hour period. The drain intake structure will be equipped with a debris screen to prevent clogging and designed to release captured runoff at a predetermined rate. It will be a passive system that restricts flows such that flows in excess of the allowable rate is accumulated in the pond for release later when the runoff decreases. The design of this stormwater basin is consistent with the County requirements to prevent or reduce contamination of surface waters from stormwater. Also, the stormwater system would require an NPDES permit for stormwater discharges from industrial sites. The terms of these permits generally include periodic monitoring and reporting to ensure that discharges do not cause off-site impacts.

Process water from the project would be discharged in accordance with an NPDES permit issued by the Central Valley Regional Water Quality Control Board (RWQCB). The District met with the RWQCB and presented information about the estimated quality of the discharge. The RWQCB reviewed the preliminary data, and provided guidance on what limitations have been required of dischargers to surface waters. Discharge limitations are issued on a case-by-case basis, with consideration for the existing and potential beneficial uses of the affected water body. For Clay Creek, the RWQCB advises that it is a potential drinking water source and is tributary to water that supports threatened and endangered fishes (chinook, delta smelt) and therefore will have very stringent requirements. As general guidance, RWQCB staff directed the District to the Inland Surface Waters Plan, and suggested it anticipate that the most conservative (lowest) values in that document be considered the likely criteria in any permit. The RWQCB also indicated that some

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

constituents (such as arsenic) were being revised in the imminent future, and the District should plan to meet those new requirements. The District believes that discharging at or below the concentrations indicated in the Inland Surface Waters Plan would adequately protect the beneficial uses and resources downstream of the project. The NPDES permit, when issued, will have daily, weekly, monthly, quarterly and annual monitoring requirements, as well as an annual reporting requirement to ensure that effluent limitations are met.

As described above, the project would be required to implement construction conditions and meet discharge requirements that would reduce direct impacts. Similarly, the discharge limitations and concentrations imposed by the RWQCB were developed with respect to long-term and indirect impacts, such as bioaccumulation or carcinogenicity. In this way compliance with the numerical criteria will ensure that the potential for indirect impacts are also very small. Finally, if direct and indirect project impacts are very small, the potential for cumulative impacts is greatly reduced. The Applicant believes adherence to these permitting and monitoring standards will avoid or minimize direct, indirect and cumulative impacts.

**WR-2: Data Adequacy Deficiency** – In addition to above request, provide more information on the potential impacts of cooling tower sludge disposal to either a Class I or Class II landfill.

**Data Adequacy Response** – This information is provided in Table 8.13-2, in the Waste Management Section. It is described in more detail below in response to Data Adequacy Deficiency WR-13.

**WR-3: Data Adequacy Deficiency** – Please provide information on any monitoring activities needed to ensure that the project will not have adverse impacts on surface and groundwater resources and potential resolution options in the event impacts are discovered—including Rancho Seco Lake as it applies to a backup water source.

**Data Adequacy Response** – The District will be required to obtain and comply with a construction stormwater permit, an industrial stormwater permit, an industrial discharge permit, a grading permit and a water quality certification, all of which will require implementation of BMPs, ongoing monitoring and reporting and compliance. These measures combined will be documented in a Stormwater Pollution Prevention Plan (SWPPP), which is required for the stormwater permit. The SWPPP describes in detail the locations where BMPs would be deployed, the maintenance thereof, and the planned response in the event of a BMP failure. The District believes that implementation and compliance with the SWPPP will be a sufficient comprehensive monitoring tool to ensure that surface and groundwater resources are avoided.

Specifically with respect to impacts to Rancho Seco Reservoir, the reservoir is located at an elevation above that of the project, and therefore would not receive any runoff, contamination or spills originating from the project area. With respect to the use of Rancho Seco Reservoir as a backup water supply or fire water supply, the frequency with which this is expected to occur is very small. The project has a highly reliable water supply, and on-site tankage that would be used before Rancho Seco Reservoir would be used. However, in

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

the event Rancho Seco water were used, the same discharge standards that apply to the typical water source would still apply. It is useful to note that Rancho Seco Reservoir water currently originates in Folsom South Canal and drains to Clay Creek at the same location where it would discharge if used by the CPP. Therefore, The District believes this would have no impact on surface or groundwater that varies from the present condition.

**WR-4: Data Adequacy Deficiency** – Figure 8.14-5 and the Goose Creek Quadrangle show other surface water bodies in the vicinity of the CPP site. Please include these surface water bodies when describing proposed surface water monitoring activities.

**Data Adequacy Response** – Water bodies in the vicinity of the project, shown in Figure 8.14-5 and on the Goose Creek quadrangle include Rancho Seco Reservoir (1.1 mile east of the project), two ponds formed in the dredge tailings (1000 feet east of the project), Clay Creek and seasonal tributaries directly to the north, and three medium sized wetlands described as “degraded seasonal wetlands” to the north. There are several farm ponds within a mile that are visible on the Goose Creek and Clay quadrangles.

The topography of the area as shown in Figure 8.14-4 and the Goose Creek quadrangle is such that water flows from south of the project to Clay Creek, north of the project, and from east of the project near Rancho Seco Reservoir to the west (also through Clay Creek. The dredge tailings east of the project are on a tributary to Clay Creek upstream of the project. The vernal pools north of the project are on the opposite side of, and at a higher elevation than, Clay Creek. If these pools over-fill, they drain to the south toward the project and are intercepted by Clay Creek. West of the project is another swale from south to north, to Clay Creek. In Figure 8.14-5, the lowest drainage is Clay Creek (labeled “C” northeast of the project) and it drains to the west.

Major downstream receiving waters from the project are shown in Figure 8.14-1 (Hadselville and Laguna Creeks).

With respect to potential impacts to surface waters and monitoring for impacts, Clay Creek and downstream receiving waters would be directly affected by discharges from the plant. The water quality in these discharges would be monitored as part of CPP’s compliance with an NPDES permit for surface water discharge issued by the RWQCB. The monitoring requirements are imposed by the RWQCB, and typically include daily, weekly and monthly sampling requirements for standard minerals, temperature, dissolved oxygen, total suspended solids, total dissolved solids and flow. Generally the monitoring requirements include at least quarterly monitoring for metals and priority pollutants, and annual monitoring for semi-volatile organic compounds and pesticides. Monitoring requirements are developed by RWQCB staff on a case-by-case basis, considering the constituent in the source water (including potential backup water supply) and conditions of the receiving water. Compliance with the monitoring requirements as adopted by the RWQCB would reduce the potential for adverse impacts to beneficial uses of surface water. In the event that an Applicant exceeds the requirements of the NPDES permit, the RWQCB imposes fines, or if necessary, a Cease and Desist order to terminate the discharge.

With respect to the potential for construction and stormwater discharge impacts, the RWQCB requires Applicants to apply for a construction NPDES permit and Industrial

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

Stormwater discharge permit that specify standards to be met by the project. Stormwater permits require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP describes the potential of toxic materials and construction site pollutants and prescribes necessary BMPs to be used to avoid the potential for off-site migration of pollutants. The SWPPP generally superimposes these BMPs on final construction plans to be certain that BMPs are installed at the same time as construction features. For the same reason, the specific BMPs and locations of BMPs cannot be specified until final construction drawings are completed. Typical BMPs for a project such as this include plastic covering, silt fencing, hay bale berms, drainage inlet protection, sediment basins, watering for dust control, straw and tack treatment and hydroseeding prior to winter storms.

**WR-5: Data Adequacy Deficiency** – Please provide all information required by the regional board for a report of waste discharge, including appropriate maps at a 1:24,000 scale, or explain why this information is not needed.

The AFC must contain all information required by the Central Valley Regional Water Quality Control Board for a report of waste discharge. Please provide the additional information:

- 1) Average and maximum daily water balance diagrams at 10 cycles of concentration.
- 2) A USGS 7½ Quadrangle map (or its equivalent) extending to at least one mile beyond site boundaries. The map must show the outline of the CPP, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage or disposal facilities. Include all springs, rivers, creeks and other surface water bodies, all domestic and irrigation wells, the direction of prevailing winds, and all residences in the map area.
- 3) A site map at an appropriate scale (1" = 50 to 100') showing the location and dimension of all major buildings, roads, parking areas, process and wastewater treatment structures, on-site wells, ponds, and wastewater application areas.
- 4) A grading and drainage plan at an appropriate scale (1" = 50 to 100') showing slope and direction of surface drainage at the CCP site.

**Data Adequacy Response** –The report of waste discharge for this project is for all practical purposes synonymous with the NPDES permits for this project. A combined response to this Data Adequacy Deficiency and the related WR-6 question is provided below.

**WR-6: Data Adequacy Deficiency** – Please provide all information required by the regional board to apply for an NPDES permit as specified in Section VI of Application Form 1 from Appendix 8.14A.

Please describe the BMP's to be employed to eliminate or reduce contamination of storm water from plant construction, concrete washing areas, parking areas, vehicle fueling and maintenance areas, equipment storage area, materials storage areas, waste handling/disposal/containment areas, and service areas.

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

**Data Adequacy Response** – As noted above, the District met with the RWQCB staff to present the information that is known about the project, and provide an opportunity for staff to advise the District on design features that would need to be considered for NPDES permitting. The District provided tables and figures from the draft AFC to the RWQCB at that time to satisfy the requirements of Section VI as follows. To the extent this information is known and engineered, it is provided in the AFC at the following locations:

Section VI Requirement	Information Provided in AFC
Design and Actual Flows	Table 7.1-1, Table 8.14-3
Constituents and Concentrations	Table 8.14-3
Schematic of Treatment Processes	Figures 8.14-3a, b, c, d
Description of BMPs	Figures 8.14-3a, b, c, d. Also, Sections 8.9.3 and 8.9.5
Description of Disposal Methods	Section 8.14.4 and Figures 8.14-3,a, b, c, d

**Average and Maximum Water Balance with 10 Cycles of Concentration:** There is a direct relationship between cycles of concentration, the quantity of water use and the concentration of discharge constituents. In Table 2.2-1, average and peak water requirements are provided for 3 cycles of concentration, which represent the maximum water use. In Table 8.14-3, concentrations of discharge constituents are conservatively estimated based on 10 cycles of concentration. In each case, the Applicant has provided the highest anticipated water use or highest concentration conditions. The water use for 10 cycles of concentration would be less than that provided in Table 2.2-1. We believe it was the intent of CEC staff to identify the “worst-case” condition, which is provided in the AFC. Actual operations of the plant would vary between 3 and 10 cycles depending on the discharge requirements issued by the RWQCB. The RWQCB has not yet determined the criteria, and therefore, the Applicant cannot predict whether the plant will be allowed to operate at 10 or 3 cycles of concentration, or somewhere in between. However, a water balance diagram at 10 cycles of concentration is presented as Figures 8.14-6a through 6d (attached).

**Maps:** Section VI of the NPDES permit application requests that maps be limited to a scale of 1:24,000 or street map, if more appropriate. Figure 8.14-1 shows the site in relation to receiving waters at approximately 1:48,000. Figure 8.14-4 shows a detail of the outfall location at a scale of 1:2,160. In addition, the CEC has been provided multiple copies of full size 1:24,000 quads for the area.

To supplement this information, the Applicant has attached a map at a scale of 1:24,000 (see Figure 8.14-7) showing the location of the plant, the location of the outfall, and the location of the plant’s connection to the existing pumping facility (intake).

The proposed CPP has no hazardous waste treatment, storage or disposal facilities as defined by RCRA and therefore none are shown. The stormwater discharge permit application requires these areas be designated, including those that are not required to have a RCRA permit. The locations of hazardous waste accumulation for less than 90 days will

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

not be known until final engineering, and the location would be included in the stormwater permit application prior to construction.

Rivers, creeks and surface water bodies in the project vicinity are shown as blue lines on Figure 8.14-7. Most creeks are shown as dotted blue lines to indicate seasonal flow. The figure identifies land use in the vicinity, including pasture, park, and residential. The predominant wind direction is also indicated.

The location of residences as mapped by the USGS is shown on the figure, although the number of residences has increased since these maps were created. Depictions of the closest residences are provided in the noise section (Figure 8.5-2) and visual resources sections (Figure 8.11-1) of the AFC.

The location of wells is confidential information maintained by the Department of Water Resources (DWR). This confidential information can be collected if the CEC issues a formal request for it and explanation of the reason for the request. DWR data will include only those wells that were logged and registered with them, and may not include all wells in the area. In lieu of these data, a survey of existing wells was provided in the Safety Analysis Report<sup>1</sup>, updated by SMUD in 1998. The information concerning these wells is probably from circa 1972, and may not account for wells that have been closed, or new wells that have been installed since then. Due to the confidential nature of this information, it can be provided under a request for confidentiality.

The location of all onsite buildings, roads, parking areas, and process and wastewater treatment structures is provided in Figure 2.2-1 of the AFC (Plot Plan). At the suggestion of CEC staff, the buildings were removed from Figure 8.14-4 as submitted, and it is being provided here as Figure 8.14-4R. The intent of removing the buildings and structures was to make the figure more readable. The site has only the stormwater retention basin in the northwest corner (no other ponds) and the leachfield. There are no wastewater application areas.

Figure 8.14-4R also shows the preliminary site grading and drainage plan to the extent current engineering can define it. It shows the slope and direction of surface drainage to be predominantly north.

With respect to BMPs that would be employed to eliminate or reduce contamination, the RWQCB requires Applicants to apply for a construction stormwater NPDES discharge permit that specify standards to be met by the project. Stormwater permits require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP describes the potential of toxic materials and construction site pollutants and prescribes necessary BMPs to be used to avoid the potential for off-site migration of pollutants. The SWPPP generally superimposes these BMPs on final construction plans to be certain that BMPs are installed at the same time as construction features. For the same reason, the specific BMPs and locations of BMPs cannot be specified until final construction drawings are completed. Applicants typically determine their own BMPs as appropriate to final construction plans. Typical BMPs for a project such as this include plastic covering, silt

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<sup>1</sup> SMUD. 1998. Updated Safety Analysis Report. Rancho Seco Power Generation Facility

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

fencing, haybale berms, drainage inlet protection, sediment basins, watering for dust control, straw and tack treatment and hydroseeding prior to winter storms.

**WR-7: Data Adequacy Deficiency** – Please provide a hydrostratigraphic map at a scale of 1:24,000.

**Data Adequacy Response** – A site-specific hydrostratigraphy is not readily available to respond to this request. However, the District understands that the objective of this request is to determine whether there is a potential for groundwater contamination resulting from surface application or discharges of wastewater. The following information should help clarify that the potential for groundwater contamination is very small.

A surface geologic map of the project site (at a scale of 1:24,000) is provided in Figure 8.15-1 of the AFC and a geologic cross section showing site stratigraphy beneath the proposed project is shown on Figure 8.15-2. A new drinking water well was recently constructed at the Rancho Seco Park and is reported to be screened at 245 feet below ground surface. The drilling logs for this well are not yet available. Historical data (from circa 1967) reported in the Safety Analysis Report (SMUD 1989) indicates that groundwater under the existing generation facility occurs under free or semi-confined conditions at a depth of approximately 150 feet below original ground surface. The report notes that water levels were steadily dropping in 1969, and therefore it is reasonable to think that depth to reliable groundwater is greater than 200 feet. The City of Galt water system is reported (at the time) to have seven deep wells, 600 to 730 feet deep.

The Safety Analysis Report estimated migration times to determine if a spill at the Rancho Seco Plant could contaminate drinking water. It reports an estimate of 1,800 years for movement of groundwater from Rancho Seco to Galt. This is attributed to low permeabilities of the finer-grained materials above the water-bearing Mehrten Formation. The 71 exploratory borings made during the investigations of the Rancho Seco site indicate that in the upper 200 feet, rocks are mainly low permeability siltstone, claystone, and silty sandstone containing lenses and layers of sandstone. From approximately 200 to 350 feet there are thick interbedded siltstone, claystone and sandstone comprising the major local aquifers. Below this are claystone and siltstone (SMUD 1989).

From these data it appears there is adequate protection against degraded surface water infiltrating into and contaminating local groundwater.

Reference: SMUD. 1989. Updated Safety Analysis Report. Rancho Seco Power Generation Facility.

**WR-8: Data Adequacy Deficiency** – Please provide required chemical and physical characteristics for the surface water bodies that will receive stormwater and/or wastewater runoff from the site. Include maps at a scale of 1:24,000. Please provide a general mineral analysis of Clay Creek.

The proposed gas pipeline will cross a number of surface water bodies. Please provide required chemical and physical characteristics for the surface water bodies crossed by the proposed pipeline and other linear facilities.

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

Please provide a general mineral analysis of the Cosumnes River, Badger Creek and the vernal pools north of the site that are crossed by the water supply line.

**Data Adequacy Response** – CPP would discharge stormwater and process wastewater to Clay Creek. Clay Creek is a seasonal stream that has been converted to perennial flow by the discharge from Rancho Seco Plant (RSP) and sometimes, Rancho Seco Park. During most of the year, the only flow is from the RSP, which uses Folsom South Canal as its water supply.

Effluent from RSP is sampled according to NPDES No. CA 0004758, for TDS, suspended matter, specific conductivity, pH, chlorine residual, nitrite and flow. Receiving water of Clay Creek is also periodically monitored for dissolved oxygen, pH, and temperature. Most of the water passing through RSP receives little treatment other than chlorination and pH balancing. Therefore, the water quality of Clay Creek is probably very similar to water quality in Folsom South Canal. Water quality data for Folsom South Canal are provided in Table 7.1-2 of the AFC. Discharger Self Monitoring Reports filed by RSP appear to confirm this, as TDS averages from 36 to 59mg/L, suspended matter ranges from 0.8 to 1.2 mg/L, and chlorine residual is maintained below 0.05 mg/L. Receiving water is generally saturated in dissolved oxygen (near 9.5 mg/L), pH is neutral (7.5), temperature varies seasonally from 52° to 75° F.

When the CPP is granted an NPDES permit for discharge, it will include a requirement for both effluent and receiving water monitoring, so continuous monitoring and reporting will be available to confirm the project causes no adverse impacts.

With respect to waterways crossed by the project gas line, most of the waterways are local irrigation and drainage canals that terminate in the Morrison Creek/Snodgrass Slough area of south Sacramento County. Water, when present, is of highly variable quality and the District is not aware of any consistent water quality sampling to characterize these streams. As noted in the AFC, it is intended that any waterway crossings for the gas pipeline would be accomplished by trenchless methods or during the dry season, so as to ensure no degradation of surface water quality.

The gas pipeline is proposed to cross under the Cosumnes River and Badger Creek using horizontal directional drilling (HDD). This technology will effectively avoid any contact or contamination of the streams by boring underneath them. As noted in the AFC, the District intends to prepare a “Frac Out” Plan and Streambed Alteration Agreement for approval by CDFG to ensure no adverse impacts to these waters. The District is making requests of CDFG, the RWQCB and Nature Conservancy to determine if there are recent water quality data available for any of these water bodies, and will provide them to CEC if available. The District will sample Clay Creek, Badger Creek and Cosumnes River and provide sampling results no later than - December 19, 2001.

**WR-9: Data Adequacy Deficiency** – Please provide maps of water inundation zones at a scale of 1:24,000 that show both the project site and the route of the proposed gas pipeline.

**Data Adequacy Response** –Maps showing the flood plain overlain on the soils maps are attached as Figures 8.14-8a through 8e.

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

**WR-10: Data Adequacy Deficiency** – Please provide the chemical characteristics of water in Rancho Seco Lake. Please provide a general mineral analysis of Rancho Seco Lake.

**Data Adequacy Response** – As stated in the AFC, the source of water for Rancho Seco Reservoir is Folsom South Canal, and the District would anticipate water quality would be very similar to the constituents and concentrations listed in Table 7.1-2 of the AFC. Once in Rancho Seco Reservoir, the water may be affected by growing organic material and recreational use of the lake by swimmers. These uses would potentially increase bacterial counts in the water, but otherwise would not be expected to either add or remove substantial amounts of any water quality characteristic. Motor boats are not allowed on the lake, so potential contamination from petroleum products also seems unlikely. The District requested information on any water quality analyses that have been performed at the reservoir, but was informed that, per state requirements, only coliform testing results are available. Sampling for minerals will be taken in Rancho Seco Lake and provided to the CEC in December 19, 2001, if required.

**WR-11: Data Adequacy Deficiency** – Please provide information on the maximum daily water use for construction including a breakdown in gpd for all construction related activities.

**Data Adequacy Response** – The AFC states that dust control during construction would require approximately 3,000 gpd. This estimate was based on water use for similar projects in the Sacramento area, and refers to the water use for site construction only.

The expected maximum water usage for dust control during construction of the natural gas line would be 14,000 gpd. An average usage would be between 8,000 to 10,000 gpd. Actual amounts may vary according to specific areas and weather conditions, but the District believes these are reasonable estimates. Construction water would be collected from different locations depending on construction proximity. Typically, water is purchased from the local municipal supply and delivered through fire hydrants, or in more rural areas may be contracted from an irrigation district. Construction water would be trucked from the supply to the construction site.

**WR-12: Data Adequacy Deficiency** – Please provide a complete description of all existing and proposed facilities, including diagrams and maps at an appropriate scale for the conveyance facilities from the Folsom-South Canal, the diversion to the CPP site, and Rancho Seco Lake. Please show existing 1971 facilities (RSP pump station, 66" pipeline from the Folsom South Canal to RSP and the 48" pipeline from Rancho Seco Lake) integrated with the proposed water conveyance facilities.

**Data Adequacy Response** – Figure 7.1-1 in the AFC has been revised (as Figure 7.1-1R) to show the proposed alignment of the water supply pipeline (estimated at 24 inches in diameter) that would be installed between the existing RSP pump station and the CPP facility in relation to the existing 66-inch diameter line from the pump station at Folsom South Canal to the RSP pump station. It also shows the existing 48-inch line from Rancho Seco Reservoir to the RSP pump station. At the connection to the existing RSP pump station, isolation valves will be provided to ensure separation of the two systems at that point. The raw water supply to CPP will be through a buried 18-inch diameter welded steel pipe. This

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

pipe will be factory pre-coated and wrapped in 20-foot sections. After welding and testing, the welded ends will be coated and wrapped prior to burial. Cathodic protection will also be used. Trenching, excavation, and backfill will be per applicable codes. Ground disturbance remediation will be as appropriate for the disturbed area and in accordance with the governing ordinances.

The location of the existing 66-inch pipeline from Folsom South Canal to RSP and the 48-inch line from Rancho Seco Reservoir to RSP are shown in Figure 7.1-1R.

**WR-13: Data Adequacy Deficiency** – Please provide a description of potential wastewater disposal facilities and the method of disposal for the hazardous wastewater and hazardous/nonhazardous sludge. (Additional information is required on sludge removal).

Wastewater disposal facilities, including cooling tower blowdown, domestic wastewater and stormwater are described in AFC Section 8.14.4. Cooling tower blowdown would be treated according to the measures diagrammed in various schematic water balances provided in the AFC. As a result of consultations with the RWQCB, the Applicant has decided to discharge the oily water separator from equipment drains into the clarifier rather than the sanitary waste system. This change is reflected in replacements for Figure 2.2-6a, and Figures 8.14-3a and 3c. Domestic wastewater would be disposed to a packaged wastewater system and leachfield designed consistent with County requirements, and located north of the site as shown in AFC Figure 8.14-4R. Stormwater would be collected and detained in a stormwater basin located north of the project site as shown in AFC Figure 8.14-4R. The stormwater system is equipped with an oil-water separator, which is the BMP advised by the RWQCB.

The disposal of nonhazardous solid waste is described in Section 8.13.4.2.1 of the AFC, and disposal of cooling tower sludge is described in Section 8.13.4.2.3 and Table 8.13-2. Sludge that may accumulate in the cooling tower basin will be removed periodically during normal maintenance activities. Table 8.13-2 estimates that between 170 and 340 pounds per year of sludge would accumulate in the basin. Upon removal, the sludge will be tested to determine whether metals have concentrated to such an extent that the sludge is considered hazardous. If the sludge is hazardous or a designated waste (Class II), it would be disposed of to a Class I landfill. If it is non-hazardous, it will be disposed of to a Class III landfill. As described in Section 8.13.5, sufficient capacity exists at both Class I and Class III landfills to accept this waste stream.

There is an internal inconsistency in the AFC with respect to disposal of cleaning wash water, which is corrected in the provided replacement pages (Figure 2.2-6aR, replacing Figure 2.2-6a; and Figures 8.14-3aR and 3cR, replacing Figures 8.14-3a and 3c). As indicated above, cleaning wash water is directed to the oily water separator, and then to the clarifier.

**WR-14: Data Adequacy Deficiency** – Please describe the stormwater collection system including capacity, construction and operation. Please include design criteria for the various facilities.

Please provide pre-and post construction runoff and drainage patterns on a topographic map of appropriate scale showing use of existing contours and all other pre- and post construction drainage features.

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

**Data Adequacy Response** – A revised Figure 8.14-4 (Figure 8.14-4R) has been provided that removes some of the plant design features from the background that obscured the underlying topographic lines.

The design criteria adopted for sizing the stormwater detention pond was based on detaining the difference in flow between the previous green field runoff and the runoff from the CPP facility during a 24-hour storm with a 10-year frequency. This volumetric difference in flow over the 24-hour period would be detained in the pond and then released over the next 24-hour period. Pond construction would be unlined with earthen embankments. Siting will take advantage of existing contours minimizing the construction impact and visually blending with the area surrounding the CPP. Total detention capacity will be 100,000 cubic yards of water. There will be a water surface area of 65,000 square feet and the deepest point being approximately 4 feet below the surface grade. Total coverage including embankments will be approximately 93,000 square feet. Runoff collected from CPP will pass through a first flush oil-water separator before being discharged into the detention pond. A spillway will be provided to release excess flow should the storm exceed the design basis.

**Stormwater detention pond:** The proposed detention pond will not only provide stormwater flood control but will be designed per BASMAA (Bay Area Stormwater Management Agencies Association) recommended BMP's (Best Management Practices) for extended detention ponds. Extended detention ponds are the recommended BMP for development of projects greater than 10-acres. The detention pond will result in moderate to high removal of suspended solids (sediment) and heavy metals. It will also provide for low to moderate removal of nutrients and Biological Oxygen Demand. The inlet structure, outlet structure, slopes, and vegetation will conform to the design guidelines. A detention time of 24-hours is consistent with the BASMAA BMP guidelines for extended detention ponds as well as performing flood control for the 24-hour 10-year frequency storm. In addition to the BMP detention pond an oil/sediment separator will be included upstream of the detention pond inlet to provide additional mitigation of oil and sediment. This combination will result in mitigation beyond the BMP for this type of project.

**Chemical / drain line locations:** The design and location of process drain lines does not occur until well into the detailed design phase since the underground routing must be consistent with the other underground utilities. These underground utilities would include the condenser circulating water lines, fuel gas lines, electrical duct banks, sanitary sewer lines, and drain lines.

**WR-15: Data Adequacy Deficiency** – Please provide an assessment of impacts from this project's proposed water use on other users of overdrafted CVP water. Please provide the historic annual consumption of CVP water used for RSP operations and a discussion of how that volume has changed since the permanent closure of the plant.

**Data Adequacy Response** – [Note: Based on discussions with the CEC Staff and Commissioners, it was agreed that the District would provide a description of its role in the CVP project. That is, the District would share what it knows about the operation of the CVP project in relation to the Rancho Seco Plant and the District's water rights.]

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

The District has a contract to purchase water from the US Bureau of Reclamation (Bureau), to provide a maximum entitlement of 75,000 afy, of which 15,000 acre-feet is water originally assigned to the District by the City of Sacramento. Since the Rancho Seco Plant has been decommissioned, the District has never used the maximum entitlement under this contract. As with all customers of the Bureau, water that is not used by the District is made available to other CVP customers.

The CVP comprises two major river systems (the Sacramento and San Joaquin), and ranges over an area nearly 500 miles long and from 60 to 100 miles wide. It includes reservoirs on the Trinity, Sacramento, American, Stanislaus, and San Joaquin Rivers. It was initially constructed primarily to protect the Central Valley from crippling water shortages and menacing floods, but the CVP also improves Sacramento River navigation, supplies domestic and industrial water, generates electric power, conserves fish and wildlife, creates opportunities for recreation, and enhances water quality. The CVP serves farms, homes, and industry in California's Central Valley as well as major urban centers in the San Francisco Bay Area; it is also the primary source of water for much of California's wetlands. In addition to delivering water for farms, homes, factories, and the environment, the CVP produces electric power and provides flood protection, navigation, recreation, and water quality benefits. According to the Bureau, the CVP manages approximately 9 million acre-feet of water of which approximately 7 million are for agricultural, urban, and wildlife use, and 600,000 acre-feet are for municipal and industrial use. The CVP also dedicates 800,000 acre-feet per year to fish and wildlife and their habitat and 410,000 acre-feet to State and Federal wildlife refuges and wetlands, pursuant to the Central Valley Project Improvement Act (CVPIA).

The District's proposed use of 8,000 afy represents less than 0.0009 (0.09 percent) of the 9 million acre feet allocated by the CVP, and about 0.013 (1.3 percent) of the water used for municipal and industrial purposes. Annual variations in water availability and distribution is the consistent challenge and responsibility of the Bureau, who is currently preparing an Environmental Impact Statement on the use and allocation of American River water. Because of the complexity of the system and number of customers, participants, water rights, entitlements and other constraints, the District believes it would be speculative at best to describe or ascribe any specific impacts of their water use on other CVP users. As noted in the AFC, there are for all practical purposes no other users of the water in Folsom South Canal. As noted here, the amount of water proposed to be used by the District is a minor fraction of the total allocation of the Bureau.

During operation, the RSP used approximately 28,000 AFY of water (approximately 25 mgd). Since closure, the plant has been using 12.9 mgd (approximately 15,000 AFY).

**WR-16: Data Adequacy Deficiency** – Please provide a will serve letter from USBR detailing SMUD's long-term availability of CVP/USBR water.

**Data Adequacy Response** – A will-serve letter has been requested and will be provided when received. However, a copy of the current contract between the District and USBR, along with a copy of the code allowing for automatic renewals, is attached as Attachment WR-16.

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

**WR-17: Data Adequacy Deficiency** – Please provide an assessment of the potential indirect and cumulative impacts associated with site and linear construction, including laydown areas, on surface water bodies.

**Data Adequacy Response** – As noted in the AFC, all site and linear construction would be permitted according to a construction stormwater NPDES permit which requires that a SWPPP be prepared that addresses this issue. Construction and laydown areas would be defined at the time of final engineering (expected fall of 2002). These would be designed specifically to avoid any runoff, sedimentation or contamination of surface water bodies in the vicinity that would cause direct impacts. By avoiding direct impacts the potential for indirect and cumulative impacts will be avoided or minimized.

**WR-18: Data Adequacy Deficiency** – Need more info on transmission line and water supply line and their potential impact on the vernal pools located between the CPP site and the RSP.

**Data Adequacy Response** – The vernal pools located between the CPP site and the RSP are described as “degraded seasonal wetlands” in the Wetland Delineation Report (Davis Environmental Consulting 2001). This is confirmed by aerial photographs that show these pools as a turbid brown, where vernal pools tend to have clear water and during the dry season it is evident these wetlands appear to have supported little or no vegetation, and look different than other pools in the area. It is not known what caused these pools to be different or “degraded” but they are clearly distinct and appear to have much less habitat quality than vernal pools east of Rancho Seco Park. Irrespective of their condition, the Applicant regards these as potentially jurisdictional wetlands until determined otherwise, and plans to avoid them.

Construction of the transmission lines north to RSP would cross over these degraded seasonal wetlands (see Figure 5.3-1). Accounting for the necessary span, one tower would be placed on the north side of Clay Creek, near the west side of the larger of the two degraded pools. After field surveys it was determined that there was adequate area to place this tower in upland habitat near the vernal pool without filling any portion of the pool. The tower would be approximately 50 feet from the edge of the pool at its closest location. Wires strung from the tower would span the wetlands, and would not cause degradation.

There are generally two options for construction in the vicinity of the degraded wetlands. Option 1 would be to make every effort to avoid and preserve the existing wetlands. Option 2 would be to make no overt effort to avoid them during construction, but to commit to efforts to restore the wetlands. Initially, the Applicant proposed to pursue Option 1 by implementing measures such as the following:

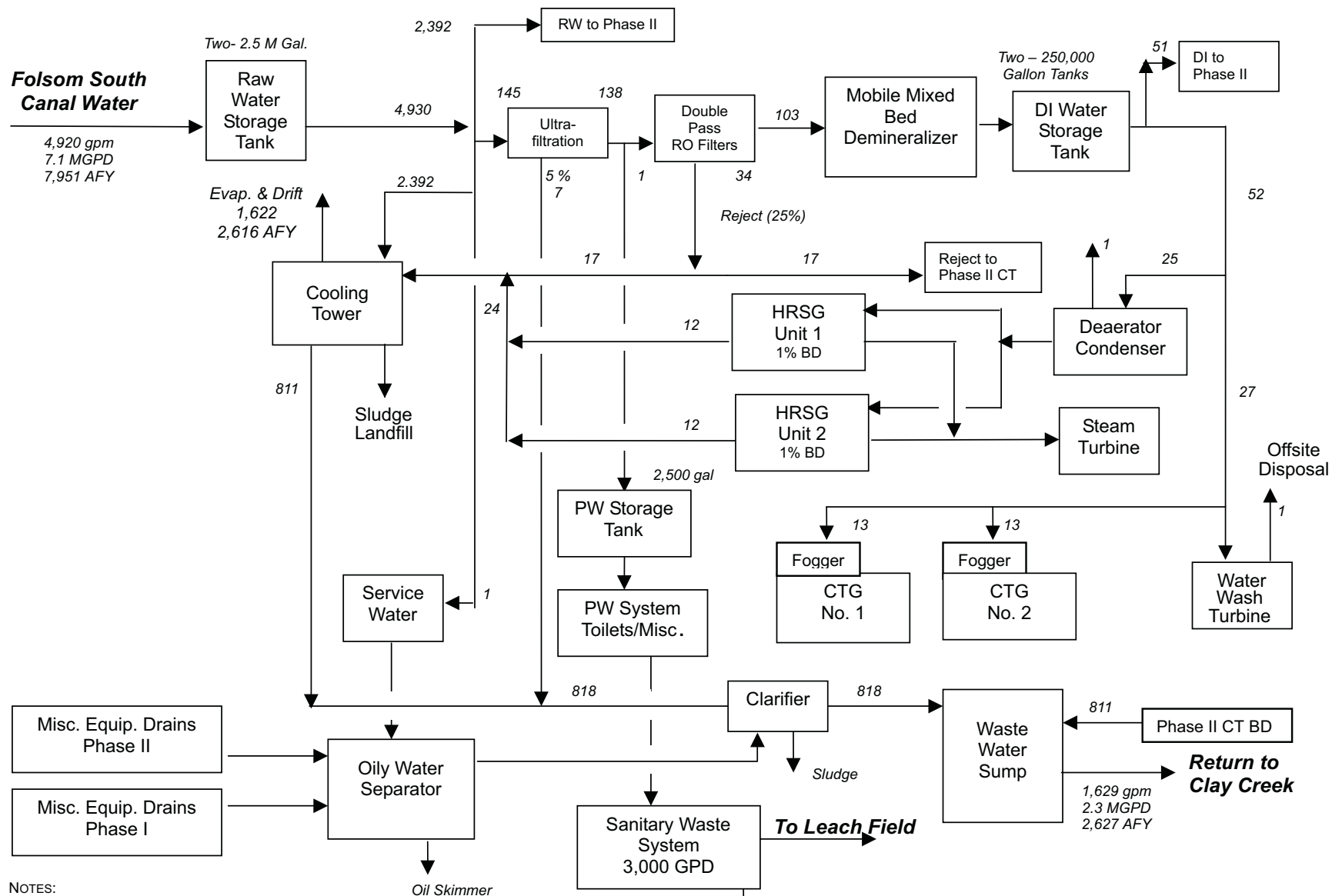
- Worker Environmental Awareness Training should be provided to construction foremen to advise them of the value and importance of protecting the wetland area.
- Schedule construction in the vicinity of the wetlands for summer when the wetlands are dry and hard.
- Access and staging to the construction site should be from the west to avoid crossing through wetland areas.

**COSUMNES POWER PLANT  
DATA ADEQUACY RESPONSES (01-AFC-19)**

- Silt fencing, hay bales or similar sediment barrier should be erected between the construction site and the wetlands to prevent any sediment and pollutants from entering the wetland area.
- Minimize construction vehicles and excavation for tower construction.
- After construction remove all waste, debris and spread or broadcast excavated soil in uplands. Recontour and harrow surface to a depth of 6 inches. Restore topsoil if removed during construction.

**WR-19: Data Adequacy Deficiency** – More information is required on those areas of the 100-year flood plain where the proposed gas pipeline will cross and its potential effects on stormwater runoff.

**Data Adequacy Response** – Figures 8.14-8a through 8e show the location of the 100-year floodplain relative to the proposed gas pipeline. The District believes that because the pipeline will be below grade and will result in no obstruction or displacement of flood capacity that the gas pipeline will have no affect on the 100-year floodplain.

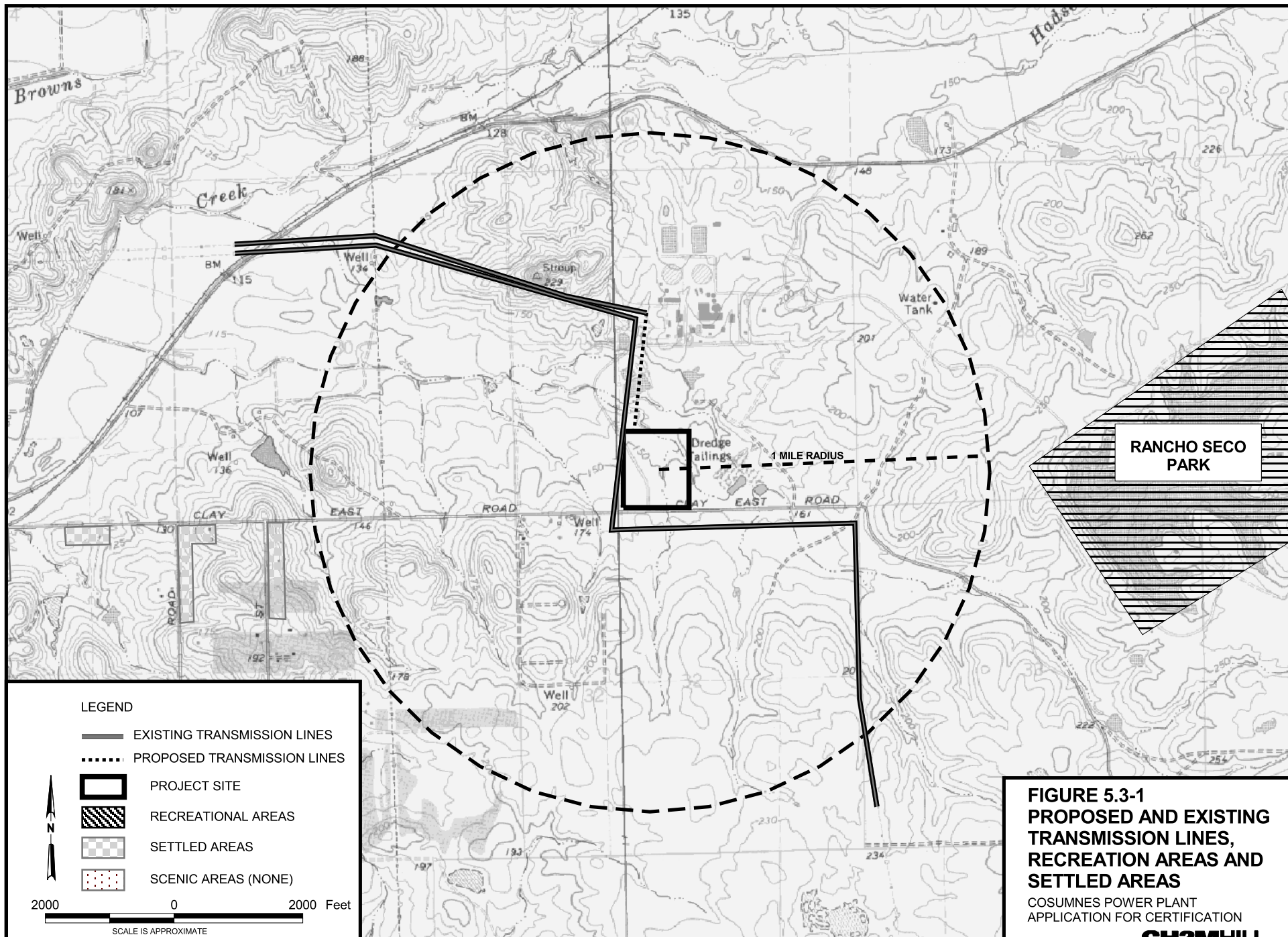


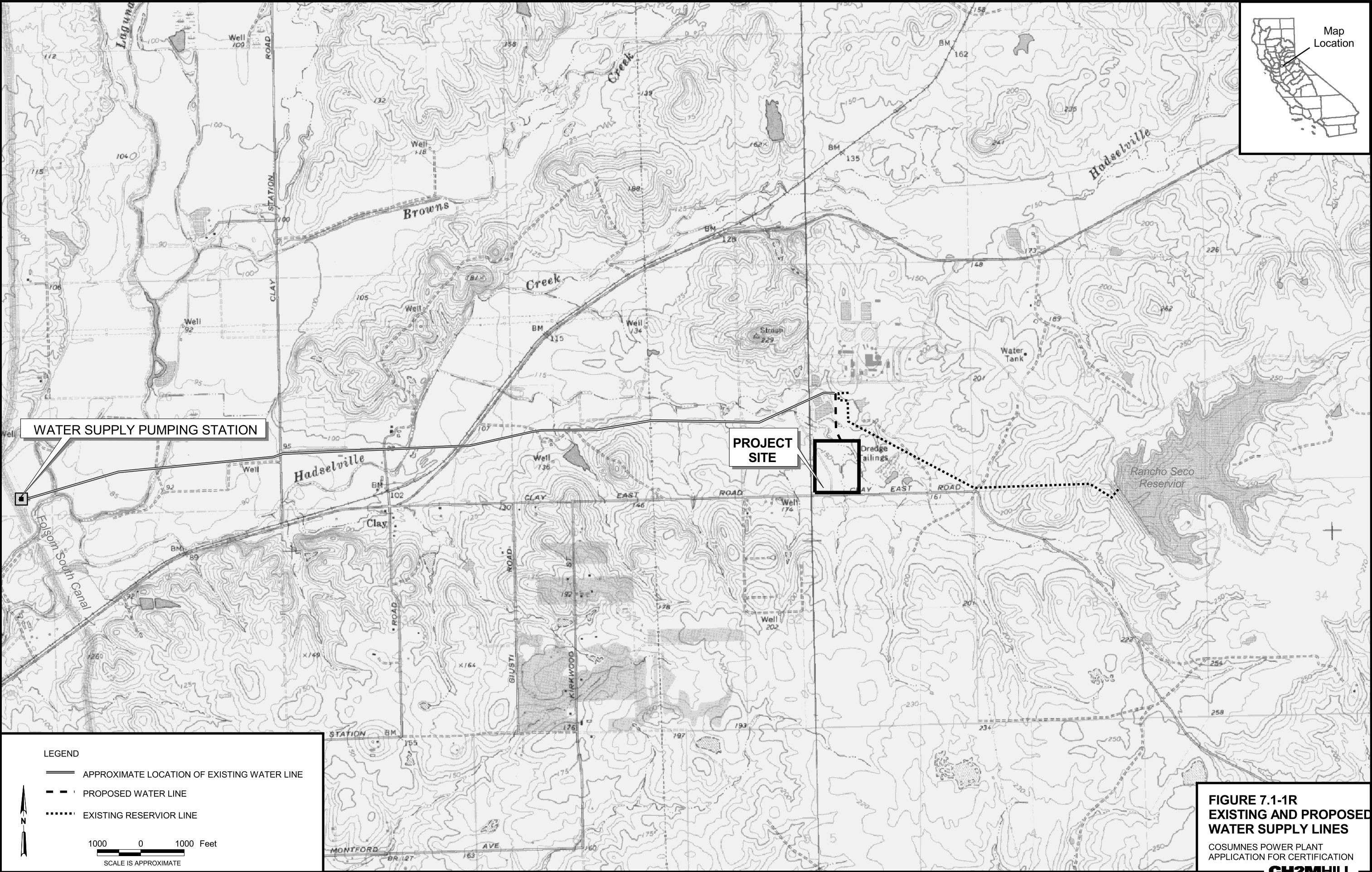
NOTES:  
ALL FLOWRATES ARE GIVEN IN GPM (UNLESS NOTED).  
FLOWS ARE BASED ON FULL LOAD OPERATION, ANNUAL AVERAGE TEMPERATURE OF 61 DEGREES F, 53 WB.  
COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 3.0 CYCLES OF CONCENTRATION.  
FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.

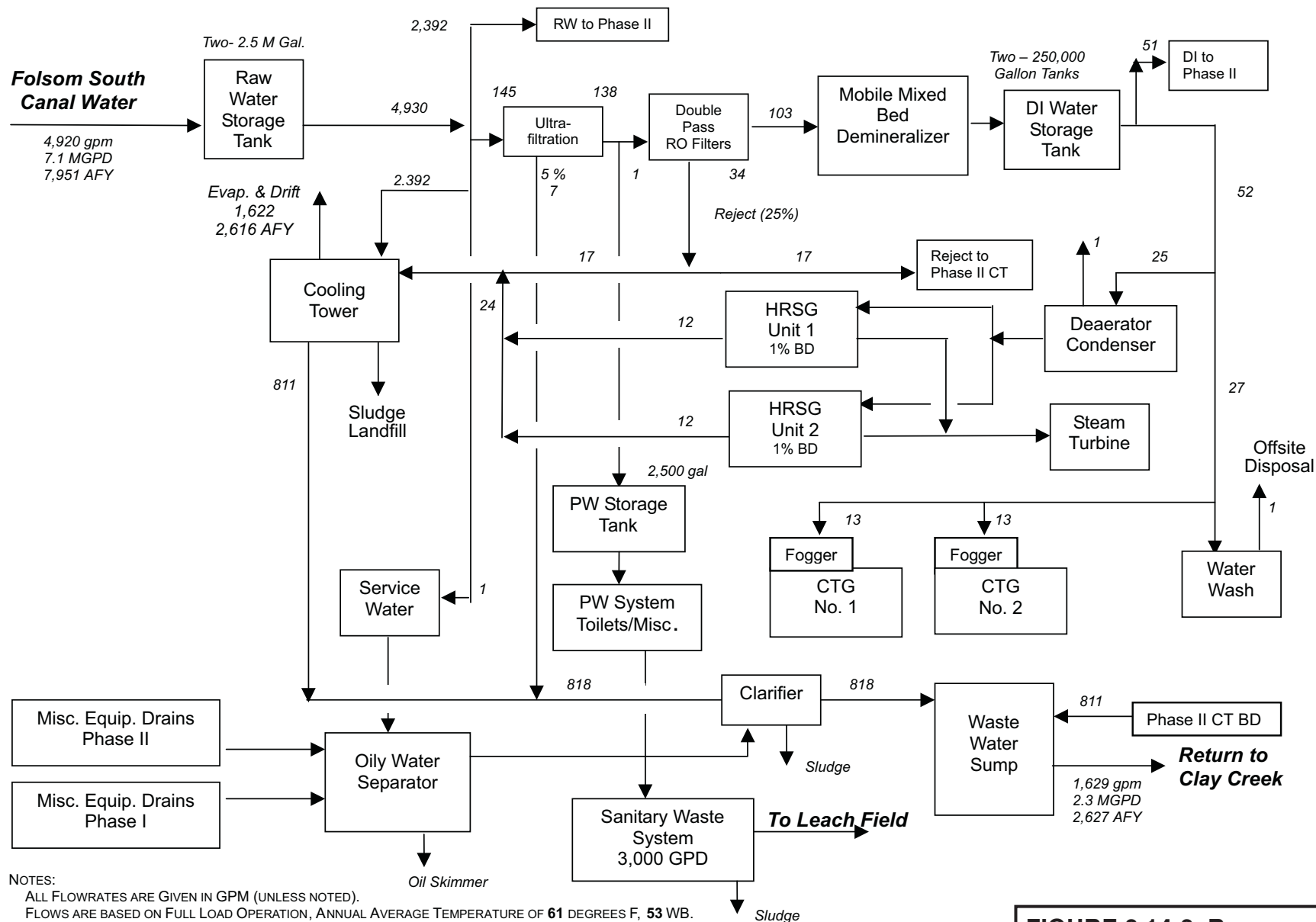
SOURCE: PB POWER, INC.

**FIGURE 2.2-6aR**  
**PHASE I - ANNUAL AVERAGE**  
**WATER BALANCE DIAGRAM**  
COSUMNES POWER PLANT  
APPLICATION FOR CERTIFICATION

**CH2MHILL**



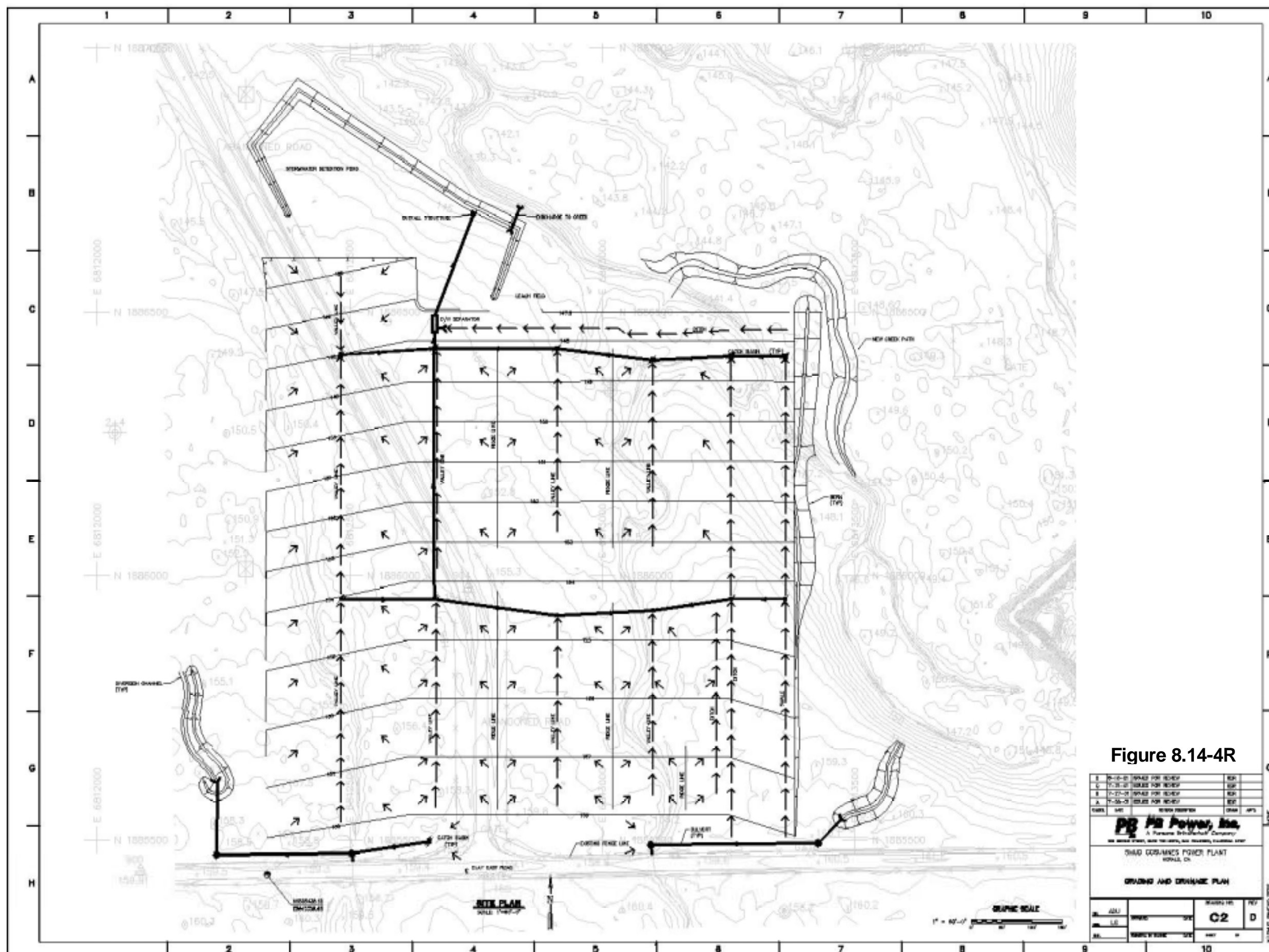


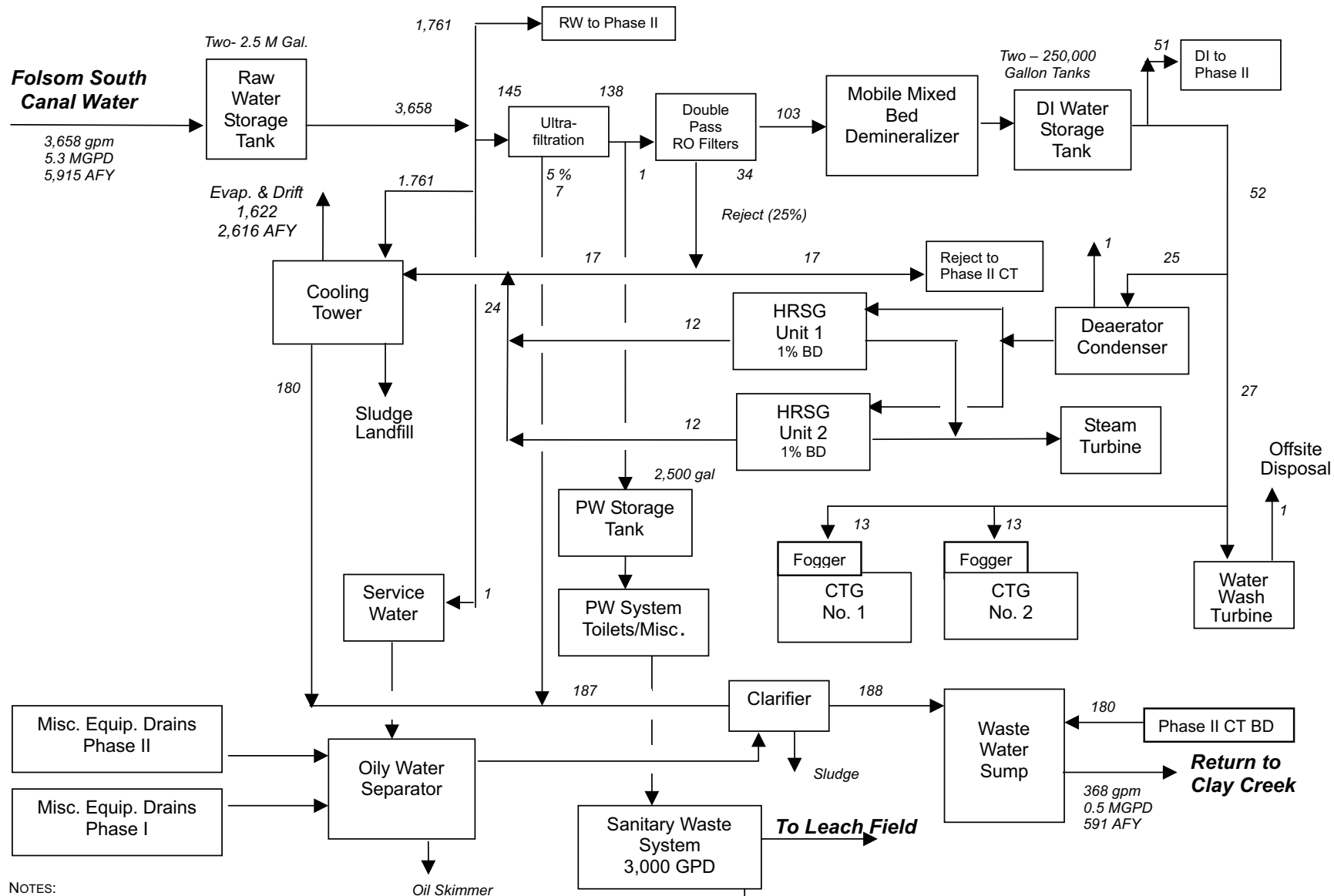


NOTES:  
ALL FLOWRATES ARE GIVEN IN GPM (UNLESS NOTED).  
FLOWS ARE BASED ON FULL LOAD OPERATION, ANNUAL AVERAGE TEMPERATURE OF 61 DEGREES F, 53 WB.  
COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 3.0 CYCLES OF CONCENTRATION.  
FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.  
SOURCE: PB POWER, INC.

**FIGURE 8.14-3aR**  
**PHASE I – ANNUAL AVERAGE**  
**WATER BALANCE DIAGRAM**  
COSUMNES POWER PLANT  
APPLICATION FOR CERTIFICATION  
**CH2MHILL**



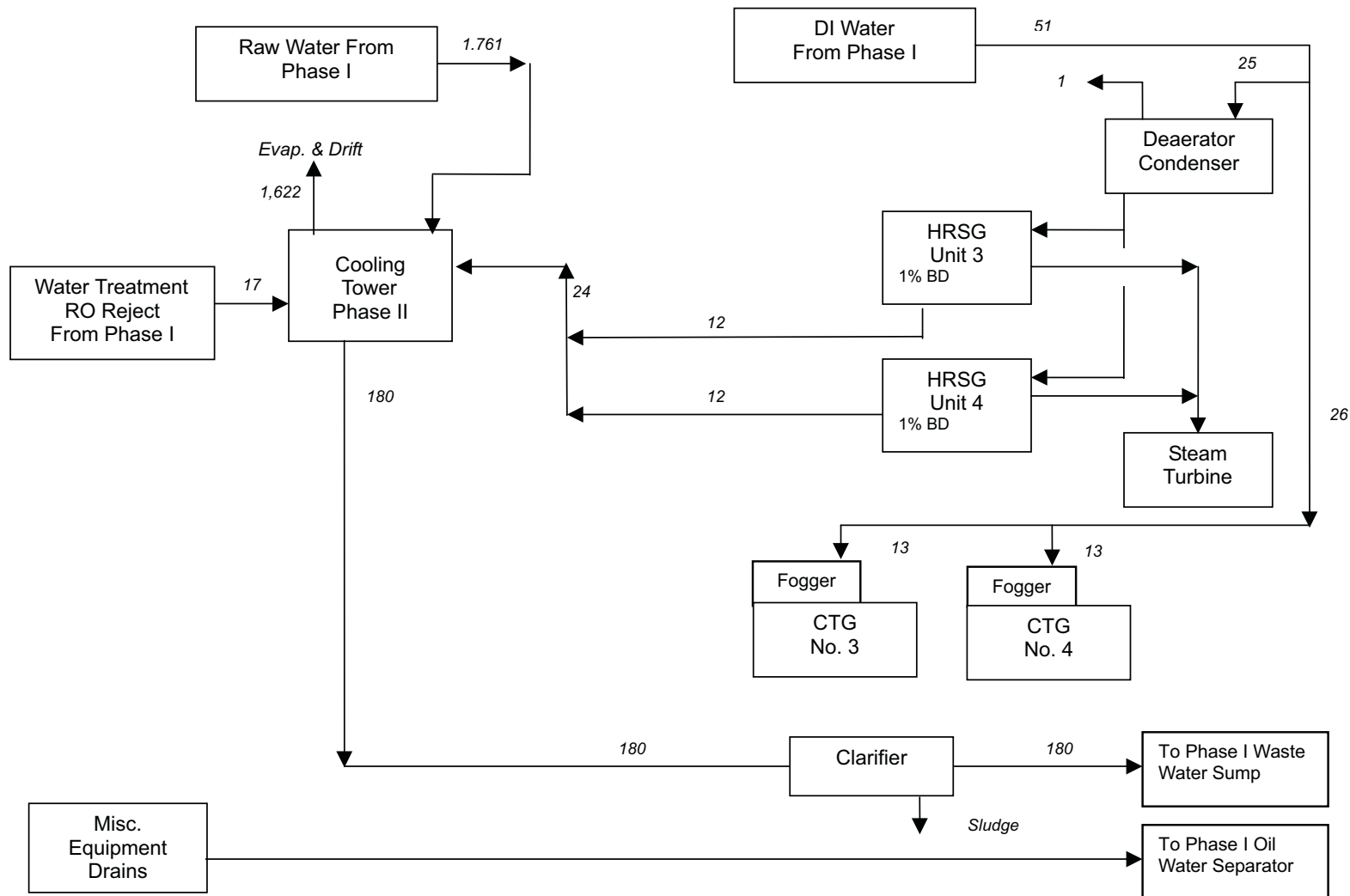




NOTES:  
ALL FLOWRATES ARE GIVEN IN GPM (UNLESS NOTED).  
FLOWS ARE BASED ON FULL LOAD OPERATION, ANNUAL AVERAGE TEMPERATURE OF 61 DEGREES F, 53 WB.  
COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 10.0 CYCLES OF CONCENTRATION  
FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.

SOURCE: PB POWER, INC.

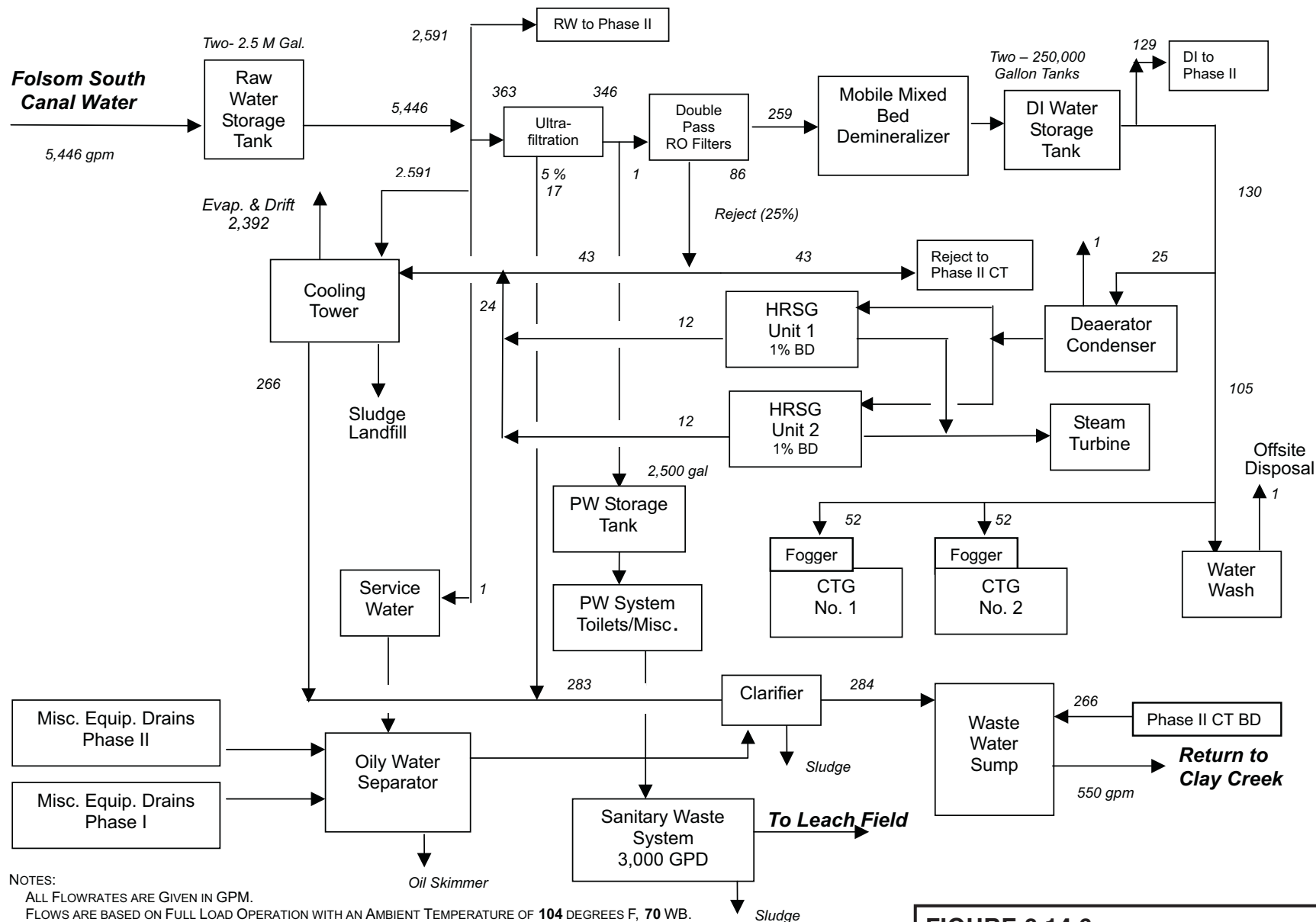
**FIGURE 8.14-6a**  
**PHASE I – ANNUAL AVERAGE**  
**WATER BALANCE DIAGRAM**  
COSUMNES POWER PLANT  
APPLICATION FOR CERTIFICATION



NOTES:  
 ALL FLOWRATES ARE GIVEN IN GPM.  
 FLOWS ARE BASED ON FULL LOAD OPERATION, ANNUAL AVERAGE TEMPERATURE OF 61 DEGREES F, 53 WB.  
 COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 10.0 CYCLES OF CONCENTRATION  
 FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.

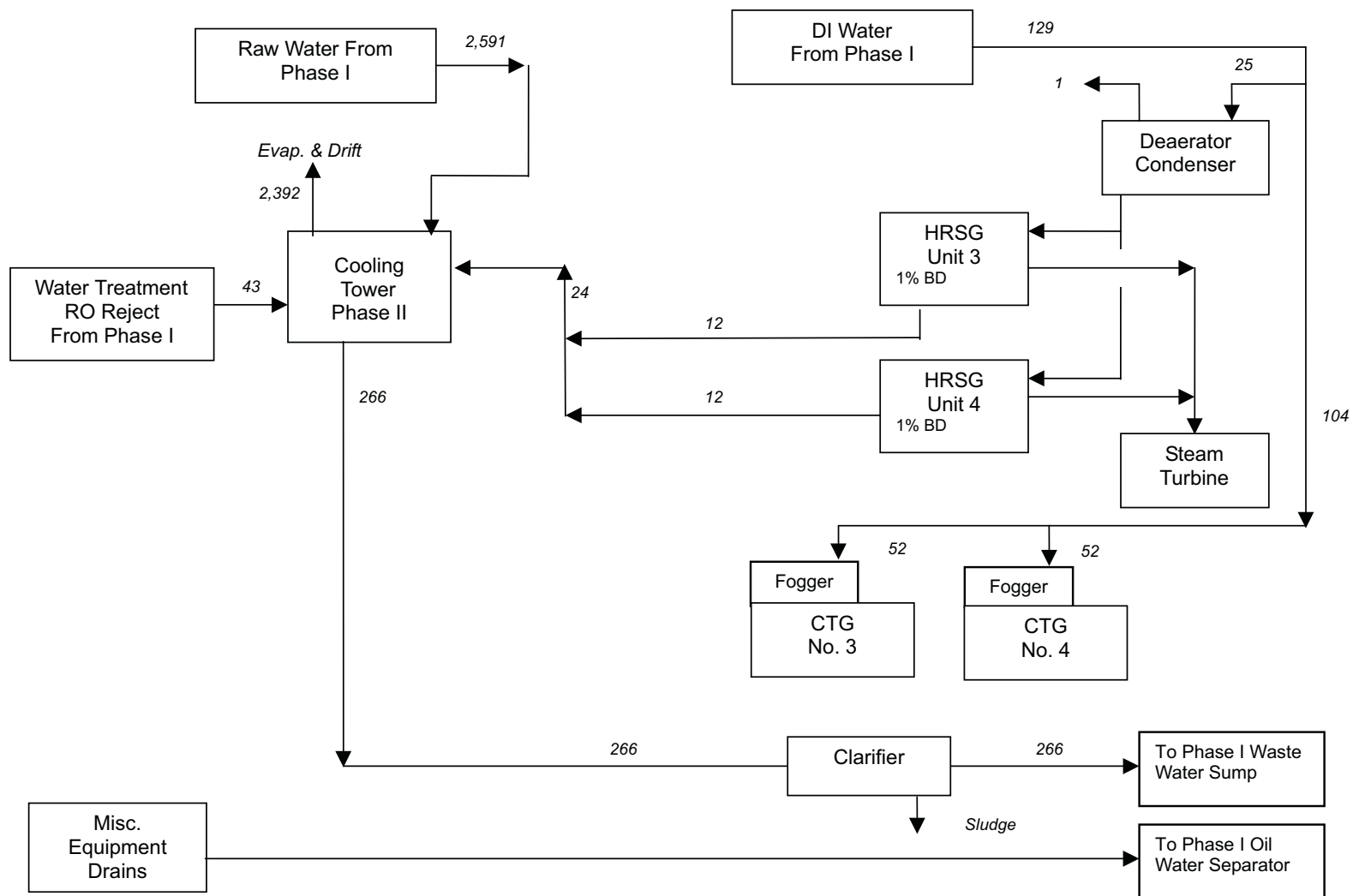
SOURCE: PB POWER, INC.

**FIGURE 8.14-6b**  
**PHASE II – ANNUAL AVERAGE**  
**WATER BALANCE DIAGRAM**  
 COSUMNES POWER PLANT  
 APPLICATION FOR CERTIFICATION



NOTES:  
ALL FLOWRATES ARE GIVEN IN GPM.  
FLOWS ARE BASED ON FULL LOAD OPERATION WITH AN AMBIENT TEMPERATURE OF 104 DEGREES F, 70 WB.  
COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 10 CYCLES OF CONCENTRATION.  
FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.  
SOURCE: PB POWER, INC.

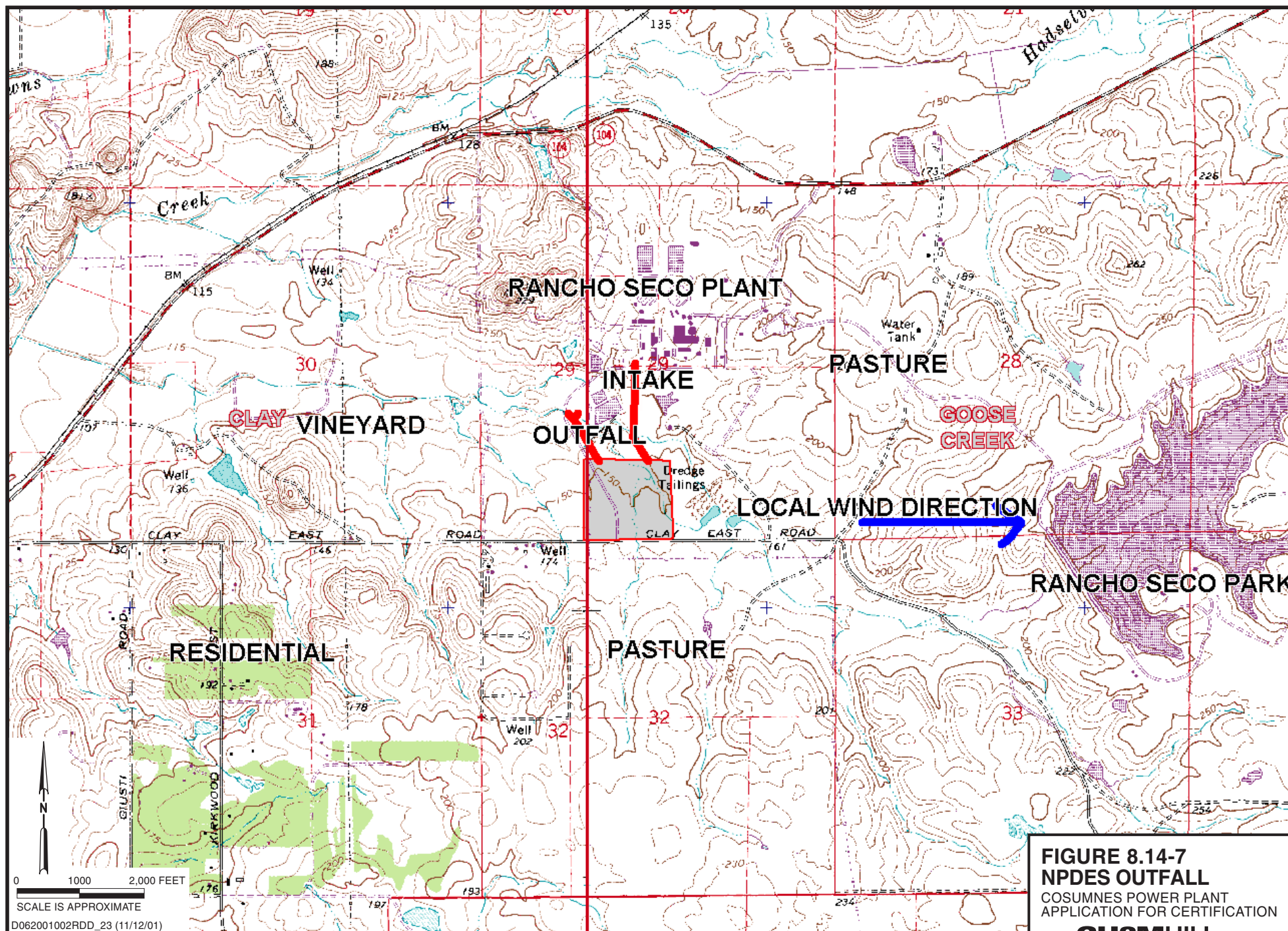
**FIGURE 8.14.6c**  
**PHASE I – 104 DEGREES FAHRENHEIT**  
**PEAK WATER BALANCE DIAGRAM**  
COSUMNES POWER PLANT  
APPLICATION FOR CERTIFICATION

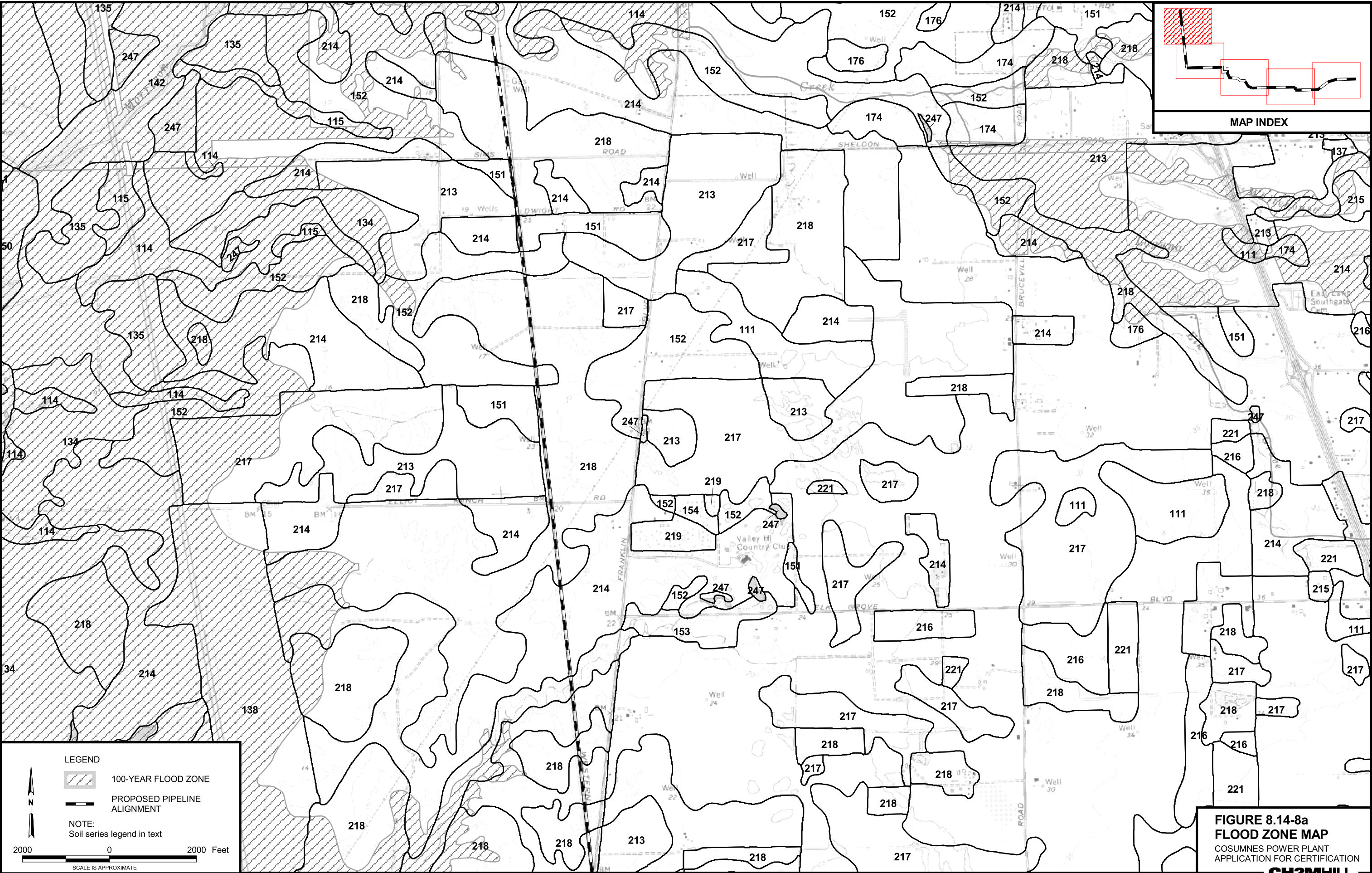


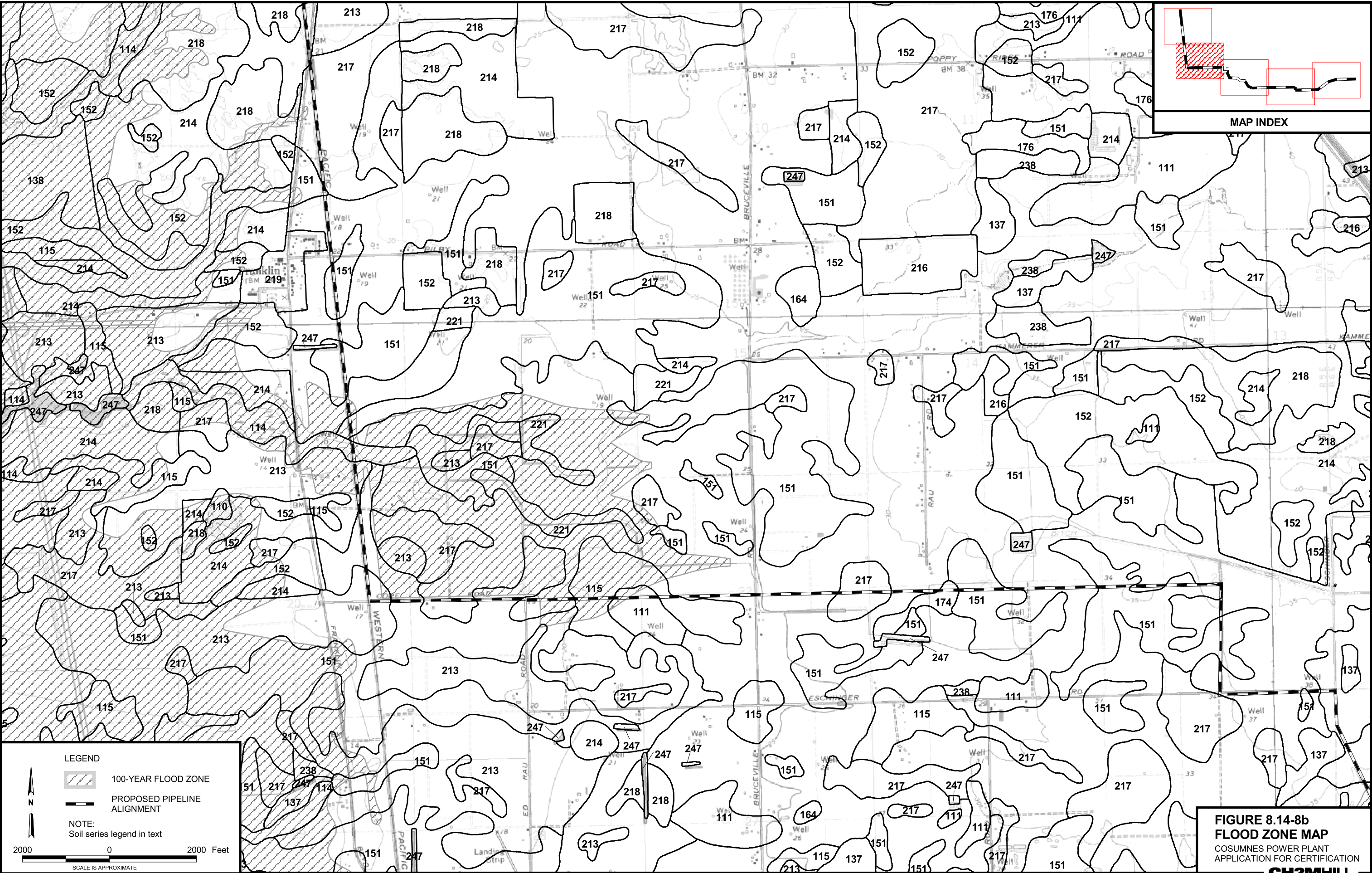
NOTES:  
 ALL FLOWRATES ARE GIVEN IN GPM.  
 FLOWS ARE BASED ON FULL LOAD OPERATION WITH AN AMBIENT TEMPERATURE OF 104 DEGREES F, 70 WB.  
 COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 10 CYCLES OF CONCENTRATION.  
 FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.

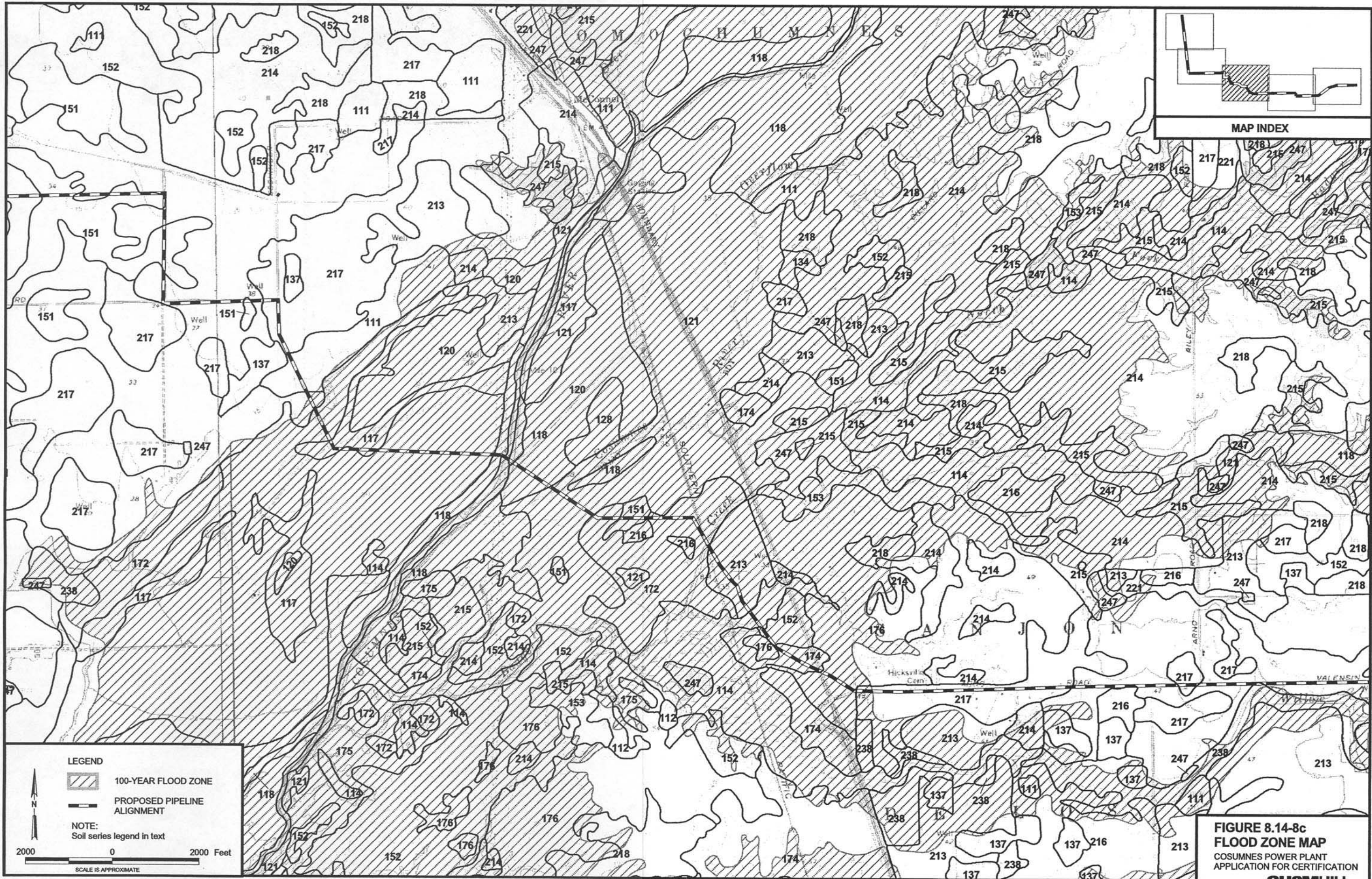
SOURCE: PB POWER, INC.

**FIGURE 8.14-6d**  
**PHASE II – 104 DEGREES FAHRENHEIT**  
**PEAK WATER BALANCE DIAGRAM**  
 COSUMNES POWER PLANT  
 APPLICATION FOR CERTIFICATION









**FIGURE 8.14-8c**  
**FLOOD ZONE MAP**  
COSUMNES POWER PLANT  
APPLICATION FOR CERTIFICATION  
**CH2MHILL**

